

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 0942.499PC01	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/US 00/18256	International filing date (day/month/year) 30/06/2000	(Earliest) Priority Date (day/month/year) 02/07/1999
Applicant LIFE TECHNOLOGIES, INC.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 5 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☒ contained in the international application in written form.

☒ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☒ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of Invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No. _____

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☒ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/18256

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/11 C12N15/10 C12Q1/68 A61K48/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N C12Q A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EMBL, EPO-Internal, WPI Data, BIOSIS, MEDLINE, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 763 173 A (LARRY GOLD ET AL.) 9 June 1998 (1998-06-09) column 3, line 47 -column 4, line 3 column 6, line 41 -column 7, line 36; claims; examples 1,2 ---	1-9, 12-25, 30-32, 35
X	WO 96 41010 A (NEXSTAR PHARMACEUTICALS) 19 December 1996 (1996-12-19) page 9, line 5 -page 10, line 23 page 22, line 12 -page 24, line 25; tables 1-5 --- -/--	1-9, 12-24, 30-32, 35



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

25 October 2000

Date of mailing of the international search report

07/11/2000

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INTERNATIONAL SEARCH REPORT

International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>SABINE AUSTERMANN ET AL.: "Inhibition of human immunodeficiency virus type 1 reverse transcriptase by 3'-blocked oligonucleotide primers"</p> <p>BIOCHEMICAL PHARMACOLOGY, vol. 43, no. 12, 1992, pages 2581-2589, XP000878602</p> <p>cited in the application page 2584, right-hand column, paragraph 2 page 2585, right-hand column, paragraph 1 -page 2588, left-hand column, paragraph 3</p> <p style="text-align: center;">---</p>	<p>1,3-6,8, 10,35, 47,50, 51,53, 55-59</p>
X	<p>HAITHAM IDRIS ET AL.: "Inhibition of HIV-1 reverse transcriptase by defined template/primer DNA oligonucleotides: Effect of template length and binding characteristics"</p> <p>JOURNAL OF ENZYME INHIBITION, vol. 8, no. 2, 1994, pages 97-112, XP000956491</p> <p>cited in the application abstract page 99, paragraph 2 -page 111, paragraph 1</p> <p style="text-align: center;">---</p>	<p>1-8,10, 11,35, 47,50, 51,53, 56,58,59</p>
X	<p>TOMOYUKI KUWASAKI ET AL.: "Hairpin antisense oligonucleotides containing 2'-methoxynucleosides with base-pairing in the stem region at the 3'-end: Penetration, localization and anti-HIV activity"</p> <p>BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, vol. 228, no. 2, 12 November 1996 (1996-11-12), pages 623-631, XP002150919 ORLANDO, FL US</p> <p>cited in the application the whole document</p> <p style="text-align: center;">---</p>	<p>47,50,51</p>
X	<p>US 5 760 012 A (ERIC B. KMIEC ET AL.) 2 June 1998 (1998-06-02) abstract; claim 1; figures 2A,,3 column 8, line 41 - line 59</p> <p style="text-align: center;">-----</p>	<p>36-42</p>

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: partially 1, 3-17, 19-23, 25-35

Present claims 1, 3-17, 19-23 and 25-35 relate to a compound defined by reference to a desirable characteristic or property, namely capable of binding or having affinity to an enzyme with polymerase activity. The claims cover all compounds having this characteristic or property, whereas the application provides support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT for only a very limited number of compounds. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the compound by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible. Consequently, the search has been carried out for those parts of the claims which appear to be clear, supported and disclosed, namely those parts relating to the nucleic acid inhibitors mentioned in examples 1 and 7.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 00/18256

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

Although claims 52 and 58, and claims 43-51, 56 and 57 as far as concerning an in vivo method, are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☒ Claims Nos.: partially 1, 3-17, 19-23, 25-35
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

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Information on patent family members

International Application No

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5763173 A	09-06-1998	US 5496938 A	05-03-1996
		US 5475096 A	12-12-1995
		AU 6159896 A	30-12-1996
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		EP 0833944 A	08-04-1998
		JP 11507223 T	29-06-1999
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		US 6020130 A	01-02-2000
		AU 689087 B	26-03-1998
		AU 5441194 A	26-04-1994
		CA 2145761 A	14-04-1994
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		JP 8501943 T	05-03-1996
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		US 5629155 A	13-05-1997
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Information on patent family members

International Application No

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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		AU 2822597 A	19-11-1997
		CA 2252762 A	06-11-1997
		EP 0906328 A	07-04-1999
		JP 2000509282 T	25-07-2000
		WO 9741141 A	06-11-1997
		US 5888983 A	30-03-1999